

THE SISI TEST

James Jerger

The SISI test is designed to find out whether or not the patient can hear very small changes in sound intensity. This is important to know because if the disorder is in the cochlea then the patient will be able to hear changes smaller than the normal ear can hear. This curious ability to hear very small intensity changes apparently occurs only when the disorder is in the cochlea, not when it is in the middle ear or in the eighth nerve.

In the SISI test the patient hears a steady tone in his ear for about two minutes. The steady tone is always 20 db above threshold. Every 5 seconds the intensity jumps exactly 1 db for two tenths of a second. If the patient hears the jump he pushes a button. The tester presents 20 jumps and counts how many times the patient pushed the button in response to a jump. The final test score is the percentage of the 20 jumps that were heard. Thus a 0 per cent SISI score means that the patient heard no jumps, a 50 per cent SISI score means that he heard 10 of the 20 jumps, and a 100 per cent SISI score means that he heard all 20 of the jumps.

Patients with normal hearing, with middle ear lesions, or with eighth nerve disorders ordinarily score from 0—20 per cent at all frequencies. Patients with cochlear disorders, such as Menière's disease or acoustic trauma, ordinarily score from 60—100 per cent at frequencies above 1000 cps. Sometimes, but not always, they score 60—100 per cent at frequencies as low as 250 cps, but this is unusual.

Many people ask whether the SISI test is an indirect test for loudness recruitment. The answer is no. SISI is **not** an indirect test for loudness recruitment; it is not an indirect test for anything. It is nothing more than a way of telling whether the patient can hear very small changes in sound intensity. There is only one reason for wanting to know this. Evidence exists that the ability to hear these very small changes is unique to disorders of the cochlea.

Many people then say, "Yes, but isn't loudness recruitment also unique to disorders of the cochlea, and, therefore, is not SISI in this sense correlated with loudness recruitment?" The answer is no, not necessarily. It is becoming increasingly apparent that disorders of the cochlea can show up in many different ways on hearing tests. If we carry out certain operations we can observe this curious ability to hear exceedingly small intensity jumps. Still other operations may lead to the observation of abnormal nonlinear distortion, diplacusis, or reduced speech discrimination scores. We really do not know whether any of these effects are interrelated. We do not know whether some of them cause others, whether all are caused by some as yet unidentified

parent effect, or whether they are all completely independent of one another. We cannot, therefore, infer any necessary relationship between SISI and loudness recruitment.

TEST "SISI"

L'essai d'index de courte augmentation de sensibilité (SISI) détermine l'habilité du patient de découvrir de petits changements dans l'intensité du son. Les courts sauts d'un decibel d'augmentation d'intensité sont superimposées à un constant ton à un niveau de sensation de 20 db. L'essayeur donne 20 augmentations et le patient répond toutes les fois qu'il entend un changement dans le ton constant.

Le compte final d'essai est le pourcentage des 20 augmentations, qui ont été entendues.

Les patients avec lésions d'oreilles moyennes ordinairement marquent de 0-20% aux toutes fréquences. Les patients avec désordres de limaçons ordinairement marquent de 60—100% aux fréquences au-dessus de 1000 cps. Les patients avec lésions du huitième nerf ordinairement marquent de 0-20% aux toutes fréquences.

J. Jerger, Ph. D.,
Gallaudet College,
Washington 2, D.C., U.S.A.

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